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DIGITAL LEADERSHIP AS A STRATEGIC RESPONSE: HOW INNOVATION CAPABILITIES MEDIATE GLOBAL COMPETITIVENESS IN A CONSTRAINED EMERGING ECONOMY

A LIDERANÇA DIGITAL COMO RESPOSTA ESTRATÉGICA: COMO AS CAPACIDADES DE INOVAÇÃO INFLUENCIAM A COMPETITIVIDADE GLOBAL EM UMA ECONOMIA EMERGENTE SUJEITA A RESTRIÇÕES

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Abstract
This research focuses on studying the role of digital leadership in global competitiveness by shaping innovation capabilities in Information and Communication Technology (ICT) organizations in a constrained emerging economy. Grounded in the Resource-Based View (RBV) and the Dynamic Capabilities (DC) perspective, it explores five dimensions of digital leadership: inspirational, innovative, uncertainty management, adaptive, and visionary and how these influence competitive advantage. A quantitative and cross-sectional survey among 204 C-level executives working in ICT firms was analyzed with the help of PLS-SEM. The results show that all leadership dimensions have a significant impact on enhancing the innovation capabilities while the innovative and uncertainty management roles have a direct impact as well on the competitive advantage. Critically, innovation capabilities show a strong positive relationship with competitive advantage and fully mediate the effect of leadership dimensions in confirming their role as the central mechanism through that digital leadership translates into sustained global positioning in the markets. The findings provide theoretical understanding of leadership as a higher-order dynamic capability and practical advice for firms managing digital transformation in institutionally complex settings.

Keywords: Digital Leadership. Innovation Capabilities. Global Competitiveness. Dynamic Capabilities. Emerging Economies. ICT Sector. Mediation Analysis.

Resumo
Esta pesquisa se concentra no estudo do papel da liderança digital na competitividade global, por meio da formação de capacidades de inovação em organizações de Tecnologia da Informação e Comunicação (TIC) em uma economia emergente sujeita a restrições. Baseada na Teoria dos Recursos (RBV) e na perspectiva das Capacidades Dinâmicas (DC), ela explora cinco dimensões da liderança digital: inspiradora, inovadora, gestão da incerteza, adaptativa e visionária, e como estas influenciam a vantagem competitiva. Uma pesquisa quantitativa e transversal com 204 executivos de nível C que atuam em empresas de TIC foi analisada com o auxílio do PLS-SEM. Os resultados mostram que todas as dimensões de liderança têm um impacto significativo no aprimoramento das capacidades de inovação, enquanto os papéis inovador e de gestão da incerteza têm um impacto direto também sobre a vantagem competitiva. Fundamentalmente, as capacidades de inovação apresentam uma forte relação positiva com a vantagem competitiva e mediam totalmente o efeito das dimensões de liderança, confirmando seu papel como mecanismo central por meio do qual a liderança digital se traduz em posicionamento global sustentável nos mercados. Os resultados fornecem uma compreensão teórica da liderança como uma capacidade dinâmica de ordem superior e orientações práticas para empresas que gerenciam a transformação digital em contextos institucionais complexos.

***Palavras-chave**: Liderança Digital. Capacidades de Inovação. Competitividade Global. Capacidades Dinâmicas. Economias Emergentes. Setor de TIC. Análise de Mediação.*

1 INTRODUCTION

The advent of the digital age has precipitated a paradigm shift in the global business environment, characterized by exponential technological advancement, pervasive connectivity, and the erosion of traditional industry boundaries (de Araujo *et al*., 2021; Vladimirov, 2021). This new landscape demands a fundamental re-evaluation of the sources of sustained competitive advantage and the organizational capabilities required to achieve it (Nambisan *et al*., 2019; Vial, 2019). Within this context, leadership has emerged as a critical focal point, with scholars and practitioners alike arguing that conventional leadership models, optimized for stability and incremental change, are increasingly inadequate for navigating volatility, uncertainty, complexity, and ambiguity (VUCA) inherent in digital transformation (Bennett & Lemoine, 2014; El Khatib *et al*., 2023). In response, the concept of digital leadership has gained substantial traction. It is conceptualized not merely as the integration of technological tools, but as a multifaceted strategic capability that enables leaders to envision and execute a digital future, cultivate an adaptive and innovative organizational culture, and leverage digital resources to create superior value (Kane *et al*., 2019; Zeike *et al*., 2019).

This imperative is particularly acute for firms operating in constrained emerging economies. These firms face a unique paradox: they must build global competitiveness to integrate into international value chains and attract investment, yet they do so while contending with significant institutional voids, resource scarcities, infrastructural limitations, and often heightened political and economic instability (Khanna & Palepu, 2010; London & Hart, 2004). In such environments, the ability to leverage intangible assets—like leadership and innovation—becomes not just advantageous, but a potential necessity for survival and growth. The Information and Communication Technology (ICT) sector within these economies epitomizes this challenge and opportunity. As a knowledge-intensive industry intrinsically linked to global networks, it possesses high growth potential but is acutely sensitive to both local constraints and global competitive pressures. Understanding how digital leadership functions within this specific context is therefore of paramount theoretical and practical importance.

An increasing range of studies confirms the existence of a positive correlation between digital leadership and different indicators of organizational success, such as

operational agility, strategic flexibility, and financial performance (Benitez *et al*., 2022; Kraus *et al*., 2022; Sousa and Rocha, 2019). Scholars have started to unravel this construct to establish major behavioral dimensions. They usually entail a visionary orientation to set a digital path, an innovative impetus to experiment and explore, adaptive resilience to switch in reaction to change, inspirational ability to motivate with digital disruption, and the ability to handle uncertainty inherent in technological futures (e.g., Li *et al*., 2020; Singh *et al*., 2020). At the same time, the strategic management literature, which is based on the Resource-Based View (RBV) and its further development, the Dynamic Capabilities (DC) framework, assigns innovation capabilities as a source of sustained benefit (Barney, 1991; Teece, 2007). Innovation capabilities are the systematic ability of a firm to conceive, create and enact new products, procedures and business models as a way of enabling the firm to refresh its resource base as well as its ability to respond to changing environmental demands (Lawson and Samson, 2001; Hussein *et al*., 2024; Ismail *et al*., 2023).

Despite this progress, significant and interrelated gaps persist at the nexus of digital leadership, innovation, and competitiveness, especially when viewed through an international business lens. These gaps constrain both scholarly understanding and managerial efficacy, particularly for firms in complex global markets from emerging economies.

First, current studies are not granular and mechanistic enough in explaining how the particular, multifaceted functions of digital leadership can be transformed into concrete competitive results. Despite the positive results of meta-analyses (e.g., Cortellazzo *et al*., 2019), meta-analysis has been criticized as having simplified digital leadership to a one-dimensional or technologically deterministic concept (Chirumalla, 2021; Hanelt *et al*., 2021). Of interest; is the critical question of the most relevant leadership behaviors, and how they impact the organizational processes through which they do so is under-studied (Wu *et al*., 2022). As an illustration, does a vision strategy directly reinforce market position or needs it to first mobilize an internal capacity like innovation? The black box in the relationship between leadership actions and performance outcomes has not been unpacked enough (Nwankpa *et al*., 2022), and practitioners are faced with abstract prescriptions, as opposed to causal pathways.

Second, the main focus of this study is the under-specified and under-tested role of the innovation capabilities as a major mediating mechanism. There is strong theoretical evidence indicating that the matter of leadership influences organizational capabilities which subsequently lead to performance (Helfat and Martin, 2015). The innovation capability of a firm should logically be improved with the help of digital leadership, as it is about being experimental, learning, and collaborating with the help of technology. Nevertheless, few empirical studies explicitly described and estimated innovation capabilities as a mediating variable between discrete digital leadership dimensions and competitive advantage (Goncalves *et al*., 2020; Vaska *et al*., 2021). Most of the literature associate's leadership to output of innovation or performance independently but fails to combine them into logical causal framework. This exclusion does not help to answer the question as to whether the value of digital leadership is, first and foremost, direct, due to the strategic decision-making, or indirect, through the creation of a more innovative organization. It is imperative to clarify this mechanism to develop a theory, as well as to inform the investment of leadership development.

Third, the existing literature exhibits a notable contextual gap, particularly with respect to emerging and resource-constrained economies. The bulk of empirical research on digital leadership and innovation have Western, stable, roots (Munsamy *et al*., 2022). However, the nature of leadership dynamics and capability-building processes can vary significantly in situations where scarcity is present, the range of institutional void is large, and uncertainty is increased. Leadership might have to be more overtly compensatory in such environments, in counteracting external restrictions not found in developed markets. Sectoral context is also ignored, as well. The aspect of digital leadership in fast-paced, technology-intensive industries like ICT will probably look different than in manufacturing or in the case of traditional services (Westerman *et al*., 2014). This context-insensitivity of research constrains the generalizability of the current models in organizations that do digital catch-up or leapfrog.

Fourth, it lacks research combining Resource-Based View (RBV) and Dynamic Capabilities (DC) perspectives in explaining the creation of competitive advantage through digital leadership. The RBV makes it clear what leadership is; it is an important, scarce, and un-copyable asset, whereas the DC perspective describes how leadership-based processes establish and transform capabilities like innovation (Eisenhardt and

Martin, 2000; Teece, 2007). Not many empirical literatures uses this integrated framework that provides a more detailed account of how digital leadership builds capabilities of innovation that eventually leads to competitiveness.

This study is designed to address these four critical gaps. We pose the following overarching research question: How do the multidimensional roles of digital leadership influence the global competitiveness of firms operating in a constrained emerging economy, and to what extent is this relationship mediated by the firm's innovation capabilities?

In order to respond to this, this research came up with; and empirically establish a combined theoretical model. The conceptualized digital leadership, which is operationalized in terms of five major positions (inspirational, innovative, uncertainty-managing, adaptive and visionary) based on a synthesis of the RBV and DC views as a higher-order dynamic capability. The propose of this capability improves the competitiveness of firms in the global market in two parallel processes: (1) in one of them, a direct route, the leadership actions directly affect the strategic positioning and the distribution of resources; (2) in the other one, the key mediating path, the leadership actions have the direct impact upon the development and improvement of the innovation capabilities of the firm, which subsequently becomes the immediate force of market advantage. We are testing this subtle model with the help of powerful partial least squares structural equation model (PLS-SEM) on the primary survey data of 204 C-level executives in the Palestinian ICT industry. This industry is a revelatory case, strategically, a case of revelation: the industry is knowledge-based and seeks to go global and yet it has to work around the strong limitations of a developing economy.

This study has a number of important contributions. In theory, it opens the black box by defining and testing the innovation capabilities as the key mediating variable between particular digital leadership behavior and competitive performance. It offers the contextual granularity much needed since it shows how this model works within a limited environment thus pushing the boundaries of digital leadership theory. In methodological terms, it provides a valid and multidimensional scale to measure digital leadership functions in a particular sectoral environment. It provides practitioners and policymakers in emerging economies with practical information, such as by elucidating the most essential aspects of leadership in terms of innovation and, eventually, a competitive stance

in the global digital ecosystem (Shin *et al*., 2023). What follows is the description of the theoretical background, formulation of the hypotheses, research methodology, findings, and discussion of the implications of the findings obtained.

2 LITERATURE REVIEW

2.1 Digital leadership

The modern business environment of volatility, uncertainty, complexity and ambiguity (VUCA) is highly unpredictable, but digital leadership has been reported to be highly serious competency that determines the success of organizations in the digital transformation process. Digital leadership can be defined as a capacity of leaders to think about digital technologies, the use of data and reasoning to offer the most appropriate performance and competitiveness to the organization (Schiuma *et al*., 2022). Unlike the old leadership, which relies on control and efficiency in operations, the digital one is agile, flexible, and engaged in learning continuously to adapt to the present technological upheaval (Tedla, 2022). The effectiveness of digital leaders is premised on the fact that they promote collaboration, foster a culture of innovation, and make sure that the technological initiatives can result in the creation of sustainable values by linking the objectives of digital transformation with the strategic objectives (Sheninger, 2019). In addition, digital leadership is not just the use of new tools, but it is also visionary thinking, strategic foresight, and the capability to handle change in the digital age in an organization. In this respect, it is crucial to enhance innovation and competitive advantage of firms in the dynamic markets. The next section expounds on the major aspects of digital leadership that pull together the growth and flexibility of organizations (Memon & Ooi, 2023).

2.2 Dimensions of digital leadership

Digital leadership is a phenomenon that can be examined in terms of a series of main roles -inspirational, innovation, uncertainty management, adaptation, and visionary-

which as a unit impacts the organizational performance and competitive advantage. Researchers have highlighted the importance of comprehending these functions in order to describe how digital leaders can convert the vision and strategy into real results (Schiuma *et al*., 2022). The inspirational support that digital leaders are engaged in aims at establishing the engagement, motivation, and confidence of employees. By taking this role, leaders build a conducive environment that can encourage innovative programs and creativity as well as engagement in problem solving. The strategy will improve the overall performance of a firm and its competitive position because it encourages employees to be in line with the strategic goals (Musaigwa & Kalitanyi, 2024). Innovation role is the identification, adoption and adoption of new technologies and processes. In this capacity, their leaders enable them to share knowledge, embrace technology, and mobilize resources to propagate continuous improvement. Innovation then becomes a process aspect of the organizational processes and has a long-term competitive advantage. This position allows companies to enhance products and processes on a continuous basis, maintaining differentiation and leading the market (Pawar & Dhumal, 2024). The uncertainty management role focuses on how a leader can manage complexity and risk during the digital age. This ability enables such leaders to foresee market shocks, handle change positively, and lead firms in turbulent markets. Handling uncertainties has allowed digital leaders to develop operational flexibility and resiliency, which increases competitiveness in the long term. The adaptive role is associated with the ability of the leader to match the strategies, processes, and resources with the changing digital ecosystem. Adaptive leaders guarantee organizational adaptability, speed in following market changes, and successful reorganization of competencies, all of which gives firms a competitive advantage in high-speed industries. Lastly, the visionary position allows leaders to envision long-term trends and invest in a smart manner in technologies and processes that render the organization future-proof. Visionary leaders align digital transformation initiatives with broader business goals, ensuring sustainable differentiation and leadership in the marketplace (Trenerry *et al*., 2021). Through a long-term outlook, digital leaders ensure long term dominance of the market due to the capacity of strategic foresight and proactive innovation.

2.3 Digital leadership and competitive advantage

Digital leadership is the ability of leaders to employ digital technologies in a strategic way to change the organizational processes, culture, and business models to achieve innovation and competitive advantage (Sheninger, 2019). It combines technological expertise and visionary thinking as well as human-focused management to steer organizations in the digital revolution. The digital leadership has become the primary source of competitive advantage in the present business conditions of volatility, uncertainty, complexity, and ambiguity (VUCA) (Brunner *et al*.,2023). Compared to hierarchies of control and efficiency of operations, which constitute the key characteristic of traditional leadership, digital leadership combines the use of technology, strategic ability, and improvisational decision-making to generate value in a dynamic market. (Florek-Paszkowska *et al*., 2021). On the way to building a business strategy, digital leaders can anticipate future trends in the market, make predictions and interpret complex sets of data and apply disruptive technologies, such as artificial intelligence, cloud computing and data analytics (Tedla, 2022). This is a quality that will help the businesses to be agile, resilient, and responsive even in the face of disruptive change that will ultimately help to improve the overall market positioning. Digital leadership fosters the culture of experimentation, collaboration, and continuous learning as well, which helps to inspire employees to make a creative contribution to the innovation works (Sheninger, 2019). Such practices have become a regular habit of an organization and as such, digital leaders are making innovation a long-term ability and not a recurrent project. Additionally, the business models, products, and services are adjusted based on the changing preferences of the clients, and organizations are encouraged to design customer-oriented strategies using digital leadership because it allows differentiation among the rivalry (Phakamach *et al*., 2023). Such a strategy is not just convenient when creating brand awareness, but also customer loyalty in the long run and bottom-line outcomes. Another good outcome of good digital leadership is strategic alignment. The conductors will also make sure that the firm works processes are in line with the technology implementation and innovation plans in a way that it will always offer value propositions (Savall Jimenez & Sunesson, 2024). The evidence available demonstrates that for organizations to which the digital leaders are attached are in a better position as regards

to fulfilling the requirements of the competition, ensuring that the most optimal processes are running and remain differentiated within the market (Aar *et al*., 2024). Digital leadership is a dynamic competency and strategy that helps businesses to maintain and develop their competitive edges in a continuously changing digital world through an insurmountable innovativeness, strategic consistency, and organizational agility. (Salih, 2024).

H1: Digital leadership has an impact on the competitive advantage.

2.4 Innovation capabilities and their mediating role

Innovation capabilities are the capability of an organization to produce, acquire and utilize new ideas, products, processes, or services to attain sustainable competitive advantage. These abilities act as an interface between leadership practices and performance of firms, which transform strategic vision and leadership purpose into organizational outcomes (Cortellazzo *et al*., 2019). In the modern digital age, the idea of innovation goes beyond the conventional R&D processes to incorporate human resources, knowledge management systems, and other current technological platforms like cloud computing, artificial intelligence, big data analytics, and the Internet of Things (Bresciani *et al*., 2021). Through these abilities, the companies will be in a better position to respond to the dynamism of the market, have flexibility in operations and be more responsive as an organization.

Digital leadership offers vision, motivation, and strategic direction but the ability to achieve performance depends on the existence of strong innovation capabilities (Ewim *et al*., 2024). Indicatively, inspirational leaders can motivate the staff, enhance innovativeness, and promote initiative taking. However, lack of systematic innovation processes can make these ideas not be translated into physical goods or services. Likewise, leaders who do well in navigating uncertainty and encouraging experimentation are also able to produce a conducive environment to innovation, though the advantages will not be realized unless the organization has the operation structures and technological systems that can execute and even scale such innovations (Eslamdoust *et al*., 2024). The innovation capabilities also enable knowledge sharing and cross-functional collaboration allowing the systematic conversion of the ideas into actionable

results. Incorporation of innovation in the organization processes and organizational culture allows companies to shorten the product development cycle, increase operating productivity, elevate customer satisfaction, and gain market positioning (Raben, 2024). Notably, such capabilities are employed as a mediating process, i.e. as a guarantee that the digital leadership behaviors would be transformed into tangible competitive advantages instead of bringing only the motivational consequences of a short-term nature. (Larson & DeChurch, 2020). There is empirical evidence regarding the importance of innovation capabilities in the operationalization of digital leadership strategies. High innovation skill and digital leadership make companies more adaptable, differentiate more in the long-run and perform better in the long-term than organizations that lack such skills (Kupiek, 2021). In addition, the innovation skills will ensure that different aspects of digital leadership such as inspirational, adaptive, and visionary functions contribute to the organizational success which enhances the linkage between leadership and the long-term competitive advantage (Klein, 2020).

Based on this discussion, the study formulates the following hypotheses:

H2: Innovation capabilities mediate the relationship between digital leadership and competitive advantage.

H2a: Innovation capabilities mediate the relationship between the inspirational role of digital leadership and competitive advantage.

H2b: Innovation capabilities mediate the relationship between the innovation role of digital leadership and competitive advantage.

H2c: Innovation capabilities mediate the relationship between the uncertainty management role of digital leadership and competitive advantage.

H2d: Innovation capabilities mediate the relationship between the adaptive role of digital leadership and competitive advantage.

H2e: Innovation capabilities mediate the relationship between the visionary role of digital leadership and competitive advantage.

H3: Innovation capabilities have an impact on the competitive advantage.

2.5 Theoretical underpinning: dynamic capabilities and RBV

The linkage between digital leadership and innovation capabilities to competitive advantage can be further explained by the existing strategic management theories. The Resource-Based View (RBV) is under the assumption that companies get better performance due to the creation of valuable, rare, non-substitutable, and inimitable resources (Cuthbertson and Furseth, 2022). In this context, it is possible to conceptualize digital leadership as strategic resource, which offers vision, influence and strategic direction which increase organizational capabilities. Meanwhile, innovation capabilities should be understood as dynamic routines that transform organizational resources into commercial outcomes, effectively mediating the link between leadership intent and actual performance results. Dynamic Capabilities Theory (DCT) is an extension of the RBV and focuses on the capacity of a firm to integrate, combine, and restructure the internal and external capabilities of firms in highly dynamic environments (Salih, 2024). Digital leaders are at the center of this scenario as they feel market opportunities, grab strategic initiatives, and change the organizational processes in response to the changing technological and market trends. The innovation capabilities act as a flame in this change that helps the organization take leadership strategies into a sustainable competitive advantage operationalized. The illustrative case is that inspirational or adaptive activity by the digital heads must have proper innovation practices, which may lead to viable products, services or procedures (Pawar & Dhumal, 2024).

The composite theoretical framework is built based on the application of RBV and DCT, and it determines the interdependence between the digital leadership and the innovation potential in the continuation of the long-term competitive advantage. RBV emphasizes the strategic character of the head specific resources, and the DCT informs about the possibilities of active mobilization of the resources in connection with the inexplicable uncertainty in the environment and disruptive technology (Kopalle *et al*., 2020). These models combine to provide a strong answer of how companies may capitalize on the use of leadership and innovation processes to continue the differentiation process, navigate operations, and be sustainably operational in digital economies (Davis and DeWitt, 2021). It is an integration perspective that puts an emphasis on the argument that digital leadership is not an abstract characteristic, but it is a strategic resource that,

when coupled with a strong capability of innovation, leads to the performance of the firm to change, innovate and succeed in the long-term competitive environment (Musran *et al*., 2024).

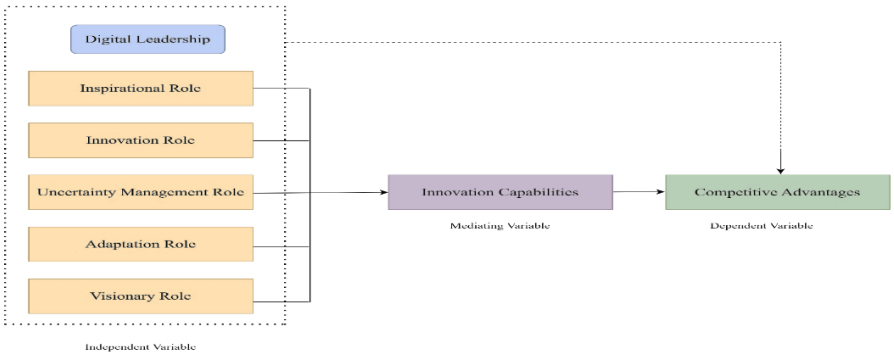
2.6 Empirical studies and literature gaps

The empirical studies on the concepts of digital leadership, innovation capabilities and competitive advantage have been increasing over the past few years but there are some limitations. Various research has proved that digital leadership has a positive effect on organizational performance and competitiveness (Florek-Paszkowska *et al*.,2021; Tedla, 2022). Nevertheless, this relationship does seem to depend on the contextual factors like the organizational culture, the nature of the industry and the size of the firm. They are usually ignored and thus the results in these situations are unlikely to be generalized to other business environments (Rane *et al*., 2024). Although innovation capabilities have been highly identified as the essential success drivers of firms, ideal empirical research often overlooks the mediating or moderating aspect of the relationship between leadership and competitive advantage. Most studies adopt a unidimensional approach to digital leadership where the concept is not considered as a multidimensional factor, with inspirational, innovative, uncertainty management, adaptive, and visionary dimensions (Sundaram *et al*., 2020). The individual impact of these dimensions on innovation processes and performance outcomes has not been thoroughly explored, leaving a gap in understanding how each aspect contributes to competitiveness.

There are also restricted cross-cultural and industry-based studies. Majority of the research studies are done in developed markets, where the emerging markets are underrepresented (Taherdoost, 2019). This gap applies in particular to the sphere of digital transformation that is becoming a compelling trend in the new markets yet has specific issues in terms of technology introduction, resource availability, and employee preparedness. Thus, the available literature gives minimal information on the interaction between digital leadership and the ability to innovate to create a sustainable competitive advantage in such settings (Jones II, 2020). It is necessary to conduct further research on how different dimensions of digital leadership affect the capacity to innovate, and the reverse is also true, the capacity to innovate is mediated or enhanced by the competitive

advantage. Based on the theoretical and empirical analyses of the sections above, this paper will combine digital leadership, innovation capabilities, and firm performance into one model. Although previous studies have investigated these constructs separately, their relationships in digitally transforming organizations have not been properly investigated. This framework would solve the existing fractiousness in literature, and explain the importance of the dimensions of leadership, and offer practical information in theory and practice, especially in organizations that are digitally developing. Based on these insights, the proposed conceptual framework is presented below.

Figure 1



3 METHODOLOGY

The quantitative and deductive research method that the proposed study will use is the ability to empirically research the impact of digital leadership on organizational innovation capabilities and competitive performance. The use of cross-sectional survey design was chosen because it allows gathering data among a variety of respondents at one time and will help to gain a valid picture of the existing leadership practices in digitally transforming settings. The method is also useful in testing hypotheses and establishing how two or more constructs are related based on previously theoretical assumptions. The study population was limited to C-level executives in Information and Communication Technology (ICT) companies in West Bank of Palestine. The reason why these respondents have been chosen is that of their direct interest in strategic decision-making processes, digital transformation processes, and the results of the organizational

performance. The convenient sampling method was used because of the nature of engagement difficulties, which is involved in top-level management. The completed dataset consisted of 204 valid responses, which exceeds the minimum sample size -155- required for reliable estimation in Partial Least Squares Structural Equation Modelling (PLS-SEM). According to the Gamma-Exponential method proposed by Jhantasana (2023) for complex models, this sample size is statistically adequate to ensure model stability and predictive accuracy.

The data were gathered using the self-administered structured questionnaire that was created in accordance with scaled instruments used in past scholarly literature. The research instrument comprised four main sections: the demographic characteristics of respondents; the roles of digital leadership namely, inspirational, innovation, uncertainty management, adaptive, and visionary roles; innovation capabilities; and competitive advantage. The rating of all measurement items was based on the five-point Likert scale where the scores were ranked between strongly agree and strongly disagree, which allowed quantitative assessment of research constructs. The questionnaire was distributed by using Microsoft Forms, which ensures the availability of the questionnaire, the confidentiality of the questionnaire, and the effectiveness of gathering the responses provided by the participants.

To analyze the data SPSS software was then employed to first generate the descriptive statistics and initial screening so that the data used was up to the standard of reliability and was suitable to further analysis. After that, the Smart PLS 4.0 software was utilized and PLS-SEM performed, which is appropriate in predictive modelling and theory development. The analysis entailed the assessment of measurement model and structural model that incorporated the assessment of internal consistency reliability, convergent and discriminant validity, path coefficients, effect sizes, and predictive relevance. This method of analysis enabled the research to evaluate the hypothesized relationships rigorously and test the moderating position of the innovation capabilities. The research process was followed with a high level of ethics. The respondents were voluntarily made to participate, and anonymity was ensured and no personal identifiers were obtained. The purpose of the research was also explained to the respondents, and they were informed that they could withdraw at any stage without consequences.

4 RESULTS

4.1 Demographic characteristics

The sample of the 204 C-Level respondents represents an extremely experienced leadership team of ICT organizations. The majority of the participants were male (83.3%), and (62.7%) aged between 35-45 years (middle-aged executives leading digital initiatives), most of which were in the middle of their careers. Education was excellent, with (58.3%) having bachelor's degree, (34.8%) master degrees, and (6.9%) PhDs. The range of experience was also considerable with (67.1%) exceeding 15 years of managerial or technology functions. Some of the most important positions that respondents occupied were CEO/GM (19.6%), COO/CCO/CMO (50.5%), and CTO/CIO/CDO (29.9%). Their areas of expertise include digital transformation, innovation management, cybersecurity, data analytics, and ICT infrastructure so that the insights in the case study are provided by the digital leaders who are strategically positioned.

Table 1

Demographic Characteristics of Respondents

Demographic Variable	Category	Frequency	Percent (%)
Gender	Female	34	16.7
	Male	170	83.3
Age	< 35 years	28	13.7
	35–45 years	128	62.7
	45–55 years	40	19.6
	55+ years	8	3.9
Education	Bachelor's	119	58.3
	Master's	71	34.8
	Doctorate	14	6.9
Experience	5–10 years	21	10.3
	10–15 years	46	22.5
	15–20 years	79	38.7
	20+ years	58	28.4
Job Role	CEO/GM	40	19.6
	COO/CCO/CMO	103	50.5
	CTO/CIO/CDO	61	29.9

4.2 Descriptive analysis

The descriptive statistics indicate a high percentage of mean scores (3.93-4.65), which means that there is a high level of agreement among constructs. All of the scores of Inspirational, Innovation, Uncertainty Management, and Adaptation present above 4.15, indicating that there is strong leadership support of motivation, creativity, resilience, and adaptability. A moderate level of collaboration with the outside world is indicated with Visionary Role scores (3.93–4.37). The scores on Innovation Capabilities (3.95-4.31) reflect the high organizational innovation preparedness, whereas Competitive Advantage scores (4.08-4.30) prove that digital leadership and innovation are the strong determinants of firm competitiveness.

Table 2

Descriptive Statistics for all Variables

Construct / Item	N	Min	Max	Mean	Std. Dev.	Skewness	Kurtosis
Inspirational Role (IR)							
IR1	204	1	5	4.52	0.565	-1.336	5.513
IR2	204	1	5	4.58	0.569	-1.608	6.098
IR3	204	1	5	4.65	0.546	-1.979	8.230
IR4	204	1	5	4.50	0.574	-1.279	5.047
IR5	204	1	5	4.53	0.615	-1.480	4.290
Innovation Role (INR)							
INR1	204	1	5	4.52	0.591	-1.377	4.732
INR2	204	1	5	4.49	0.600	-1.278	4.239
INR3	204	1	5	4.43	0.650	-1.134	2.666
INR4	204	1	5	4.40	0.662	-1.058	2.299
INR5	204	1	5	4.15	0.693	-0.831	2.005
INR6	204	1	5	4.34	0.694	-1.103	2.379
Uncertainty Management Role (UMR)							
UMR1	204	1	5	4.16	0.672	-1.088	3.361
UMR2	204	1	5	4.39	0.614	-1.112	4.033
UMR3	204	1	5	4.40	0.662	-1.072	2.310
UMR4	204	1	5	4.35	0.689	-1.038	2.072
UMR5	204	1	5	4.52	0.624	-1.552	4.760
UMR6	204	1	5	4.37	0.664	-1.085	2.669
Adaptation Role (AR)							
AR1	204	1	5	4.30	0.661	-0.827	1.925
AR2	204	1	5	4.39	0.629	-1.003	2.903
AR3	204	1	5	4.36	0.608	-0.917	3.299
AR4	204	1	5	4.23	0.709	-1.033	2.808
AR5	204	1	5	4.38	0.673	-1.405	4.679
Visionary Role (VR)							
VR1	204	1	5	4.20	0.750	-1.046	2.297

VR2	204	1	5	4.16	0.701	-0.582	0.897
VR3	204	1	5	4.28	0.655	-0.787	1.992
VR4	204	1	5	4.25	0.711	-0.911	1.676
VR5	204	1	5	3.93	0.931	-0.445	-0.571
VR6	204	1	5	4.37	0.626	-1.072	3.598
Innovation Capabilities (IC)							
IC1	204	1	5	4.27	0.758	-1.465	4.010
IC2	204	1	5	4.25	0.774	-1.291	2.761
IC3	204	1	5	4.17	0.724	-0.973	2.050
IC4	204	1	5	4.08	0.758	-0.885	1.466
IC5	204	1	5	4.12	0.727	-1.040	2.758
IC6	204	1	5	3.95	0.984	-0.801	0.102
IC7	204	1	5	4.09	0.764	-1.022	2.186
IC8	204	1	5	4.15	0.763	-1.070	2.284
IC9	204	1	5	4.18	0.737	-1.121	2.808
IC10	204	1	5	4.31	0.735	-1.311	3.255
IC11	204	1	5	4.24	0.646	-0.710	2.067
Competitive Advantages (CA)							
CA1	204	1	5	4.08	0.793	-0.809	1.203
CA2	204	1	5	4.24	0.734	-1.393	4.258
CA3	204	1	5	4.21	0.693	-1.107	3.524
CA4	204	1	5	4.09	0.826	-0.961	1.320
CA5	204	1	5	4.27	0.743	-1.135	2.507
CA6	204	1	5	4.29	0.673	-1.301	4.615
CA7	204	1	5	4.18	0.748	-1.013	2.245
CA8	204	1	5	4.30	0.669	-1.129	3.247
CA9	204	1	5	4.12	0.830	-1.120	1.968
CA10	204	1	5	4.10	0.788	-0.908	1.532
CA11	204	1	5	4.22	0.690	-1.131	3.665
CA12	204	1	5	4.17	0.710	-1.169	3.481

4.3 Reliability analysis

Reliability analysis was performed to assess the internal consistency of all measurement constructs included in the study. Cronbach's Alpha (α) was used as the primary diagnostic indicator, as it remains the most widely accepted measure for evaluating the reliability of multi-item scales in quantitative research. According to Nunnally and Bernstein (1994), alpha values above 0.70 indicate acceptable reliability, while values above 0.80 represent very good internal consistency, and values exceeding 0.90 reflect excellent reliability. The results obtained in this study demonstrate that all constructs achieved reliability levels well above the recommended standards, confirming the consistency and stability of the measurement items.

The five digital dimensions of leadership, namely Inspirational Role (IR), Innovation Role (INR), Uncertainty Management Role (UMR), Adaptation Role (AR),

and Visionary Role (VR) had high reliability scores of 0.832-0.883, which demonstrated that the respondents possessed high internal consistency. Inspirational Role (α = 0.883) had the greatest reliability of the leadership constructs indicating that the respondents constantly judged the ability of leaders to motivate, energize, and inspire. Strong reliability was also found in the Innovation Role (α = 0.866) and Adaptation Role (α = 0.864) that indicates that the measurements of the abilities of leaders to encourage creativity and adjust strategies based on the changing conditions were held constant. Even though the Uncertainty Management Role (α = 0.832) was a little bit less, it does correspond to strong internal coherence, which means that the items adequately measured the competence of leaders in addressing ambiguity and risk management. The Visionary Role (α = 0.854) also indicated similar and coherent measurements of the future orientation and strategic thinking of leaders.

The outcomes constructs-Innovation Capabilities (IC) and Competitive Advantage (CA) recorded very high values of 0.930 and 0.940 above the standard of 0.90 according to which there is excellent internal consistency. The alpha of the innovation capabilities (0.930) means that there is a consistent evaluation of the capability of the organization to create, combine, and use new knowledge and technology. Similarly, competitive advantage construct (α =0.940) indicates the credible appraisal of the organizational performance by the respondents, market differentiation, and strategic strength.

The reliability outcomes will assure the soundness of the measurement tool and enhance the confidence in further statistical analyses, such as correlation analysis, regression analysis, and structural equation modeling. The high level of internal consistency of all constructs implies that the questionnaire items were well formulated, contextually valid and theoretically consonant with the available literature. High reliability also reduces measurement error maximizing the accuracy of estimated relationships among digital leadership dimensions, innovation capabilities, and competitive advantage. Accordingly, the effects that are observed in the structural model are more probable to demonstrate real theoretical relations than any inconsistency in measurement.

Table 3

Reliability Analysis using Cronbach's Alpha

Constructs	No. of Items	Mean	Std. Deviation	Cronbach's alpha (CA)
Inspirational Role (IR)	5	4.56	0.474	0.883
Innovation Role (INR)	6	4.39	0.502	0.866
Uncertainty Management Role (UMR)	6	4.36	0.483	0.832
Adaptation Role (AR)	5	4.33	0.529	0.864
Visionary Role (VR)	6	4.20	0.559	0.854
Innovation Capabilities (IC)	11	4.16	0.587	0.930
Competitive Advantages (CA)	12	4.19	0.577	0.940

4.4 Regression analysis

The results of the structural regression are very strong empirical support of the given conceptual model because it was proved that digital leadership has a significant implication on both innovation capabilities (IC) and competitive advantage (CA). The results indicate that there is a distinct and consistent trend in all the dimensions of leadership with the core focus being the innovation capabilities in transforming the actions of leadership into recognizable competitive results.

The direct impacts reveal that all five digital leadership roles, including the Inspirational Role (IR), Innovation Role (INR), Uncertainty Management Role (UMR), Adaptation Role (AR) and Visionary Role (VR) play a very large role in increasing innovation capabilities. The strongest of these was the Visionary Role ($\beta = -0.290$, $p = 0.01$), which means that leaders that convey a strong, future-oriented strategic direction can promote the creation of more vigorous innovation processes. The Uncertainty Management Role ($\beta = 0.270$, $p < 0.01$) also proved to be significant, the role of leaders in ambiguity navigation and creation of the psychologically safe environment with the climate in which the experimentation is possible. These findings are consistent with the dynamic capability theory that provides that a sensing and seizing opportunity need leadership behaviors that predict shifts in the market and mobilize organizational resources in response. The other roles: Adaptation, Inspirational and Innovation also showed high positive impacts supporting the idea that digital leadership should be a multidimensional approach to strengthen the innovation capacity.

The direct impacts on competitive advantage, in turn, have a more discriminative pattern. Incidentally, only the Innovation Role ($\beta = 0.220$, $p < 0.01$) and Uncertainty

Management Role ($\beta = 0.122$, $p < 0.05$) were found to be significantly predicting CA, which partially supported H1. This is an indication that leadership behaviors that focus on creativity, experimentation, and resilience have a direct impact on competitive positioning, which cannot have immediate performance benefits unless mediated by the innovation capabilities. These findings are in line with the previously conducted studies that found that leadership by itself could not yield to competitive advantage unless it was entrenched into organizational processes and competencies.

The results further highlight the pivotal role of Innovation Capabilities in determining competitive advantage. The path from IC to CA ($\beta = 0.731$, $p < 0.001$) is the strongest in the model, confirming H3 and demonstrating that innovation capabilities constitute the most significant driver of organizational competitiveness. This finding supports the resource-based and dynamic capabilities frameworks, which argue that firms outperform competitors when they possess superior innovation routines that are difficult to imitate.

These relationships are further explained by the mediation analysis. All five indirect paths between digital leadership functions and competitive advantage through innovation capabilities were important which confirmed H2 and its sub-hypotheses (H2a–H2e). Adaptive, visionary, and inspirational roles exhibited full mediation, which implies that these behaviors affect CA in the way of development of capabilities. Conversely, the Innovation and Uncertainty Management roles showed that there are partial mediation roles, indicating both the direct and indirect paths to competitive advantage.

Table 4

Structural Model Path Coefficients and Significance Levels for Direct and Indirect Effects

Path (type)	β (Std. coef.)	SE	t-value	p-value	Significance
Direct effects on Innovation Capabilities (IC)					
IR → IC	0.178	0.068	2.62	0.005	p < 0.01
IVR → IC	0.129	0.068	1.90	0.031	p < 0.05
UMR → IC	0.270	0.067	4.03	<0.001	p < 0.01
AR → IC	0.218	0.067	3.25	<0.001	p < 0.01
VR → IC	0.290	0.066	4.39	<0.001	p < 0.01
Direct effects on Competitive Advantage (CA)					
IR → CA	0.088	0.069	1.28	0.102	n.s.
IVR → CA	0.220	0.067	3.28	<0.001	p < 0.01

UMR → CA	0.122	0.068	1.79	0.038	p < 0.05
AR → CA	0.036	0.070	0.51	0.304	n.s.
VR → CA	0.061	0.069	0.88	0.191	n.s.
IC → CA	0.731	0.061	11.98	<0.001	p < 0.01
Indirect (mediation) effects via IC					
IR → IC → CA (indirect)	0.130	0.048	2.71	0.004	p < 0.01
IVR → IC → CA (indirect)	0.094	0.049	1.92	0.027	p < 0.05
UMR → IC → CA (indirect)	0.198	0.048	4.13	<0.001	p < 0.01
AR → IC → CA (indirect)	0.159	0.048	3.31	<0.001	p < 0.01
VR → IC → CA (indirect)	0.212	0.048	4.42	<0.001	p < 0.01

R^2 (Innovation Capabilities, IC) = 0.686 (Adj. R^2 = 0.678; Q^2 = 0.499)
R^2 (Competitive Advantage, CA) = 0.877 (Adj. R^2 = 0.873; Q^2 = 0.636)

The results of the structural model indicate a good support of all hypotheses (H1-H3; H2a-H2e). The five dimensions of digital leadership had a great impact on Innovation Capabilities (IC) with the strongest effects on the Visionary and Uncertainty Management roles. The Innovation and Uncertainty Management positions were the only ones that had a positive direct effect on Competitive Advantage (CA), with IC having a strong effect on CA (β = 0.731). Mediation analysis revealed that all leadership effects were significantly transmitted by IC to CA, this means all or partial mediation in dimensions. All in all, the findings demonstrate that digital leadership enhances competitive advantage mainly by developing innovation capabilities.

Table 5

Effect Size (f^2) Estimates for Structural Model Relationships

Path (predictor → outcome)	**f^2**
IR → IC	0.095
IVR → IC	0.080
UMR → IC	0.173
AR → IC	0.143
VR → IC	0.195
IR → CA	0.046
IVR → CA	0.122
UMR → CA	0.074
AR → CA	0.021
VR → CA	0.037
IC → CA	**0.577**

5 DISCUSSION

5.1 Overview of key findings

The research indicates that digital leadership increases the competitive advantage majorly due to innovation capabilities. Although each of the dimensions of leadership enhances innovation capabilities, it is only the Innovation and Uncertainty Management which has a direct impact on competitiveness. The best predictor of competitive advantage is innovation capabilities, which implies that strategic benefits are enjoyed by firms in the event that leadership behaviors are successfully translated into innovation-driven organizational capabilities.

5.2 Interpretation of digital leadership effects on innovation capabilities

The findings of the analysis are good empirical evidence that supports the argument that digital leadership is a capability-building mechanism that happens at the foundational level in organizations (Schiuma *et al*., 2022). The conclusion that all five dimensions of digital leadership, which include Inspirational, Innovation, Uncertainty Management, Adaptation and Visionary, strongly impact and positively contribute to Innovation capabilities (IC) reflects the interdisciplinary aspects of leadership in digital transformation settings. Digital leadership is not a single behavioral characteristic but a bundle of strategic, relational, and cognitive capabilities that can be used to combine the potential of an organization to innovate successfully (Musaigwa & Kalitanyi, 2024).

The Visionary Role has the most significant impact on innovation capabilities, proving that an impressive digital vision is the key to the process of innovation direction. Visionary executives communicate long-term technological directions and guide the employees on how innovation is relevant to the overall organizational objectives (Tedla, 2022). Such clarity in strategies minimizes confusion, facilitates priority process in resources, and encourages teams to engage in transformational innovation projects to ensure that resources are aligned and focused on areas of greatest impact.

The Uncertainty Management Role also presents a significant impact with a significant focus on the significance of psychological safety, resilience and risk tolerance in promoting innovation maturity. Uncertainty acceptance leads to the practice of experimentation, risk-taking that is calculated and failure learning, which are essential elements of innovation-driven cultures by leaders. These leaders can generate ideation through uncertainty as an opportunity and make employees more willing to implement new technologies and approaches (Ewim *et al*., 2024), which makes the process of developing capabilities quicker.

Likewise, the Adaptation Role contributes to the innovation abilities considerably. Adaptive leaders will encourage flexibility, responsiveness and openness to change- vices that cannot be seen in unstable digital ecosystems. Adaptive leadership promotes dynamism in the learning processes that are necessary to form and refresh innovation capabilities by promoting continuous learning and easy adaptation to changing technological or market environments (Eslamdoust *et al*., 2024).

Although the strongest influences are created by Visionary, Uncertainty Management and Adaptation roles, the Inspirational and Innovation Roles are also significant contributors to the capability development. The inspirational leadership model can strengthen motivation, involvement, and dedication to novel projects, motivating the staff to become active in the innovative problem-solving (Raben, 2024). The Innovation Role which is characterized by creativity, experimentation and generation of ideas directly enhances innovative thinking and reinforces behaviors that underline capability improvement.

In general, the findings reveal that innovation abilities flourish when the leadership is strategic, resilient, adaptive, motivational and creativity based. The findings have served to advance theoretical viewpoints, which place digital leadership as a dynamic capability that defines how organizations feel opportunities, take them using innovative initiatives, and reorganize resources to perform continued innovation (Klein, 2020). The data prove that technological assimilation, cross-functional cooperation, and knowledge integration that are the most important processes of maturation of innovation capabilities are initiated by the leadership behaviors.

5.3 Direct effects of digital leadership on competitive advantage

Only the Innovation Role and Uncertainty Management Role demonstrated significant direct effects on competitive advantage. Leaders that are proactive and encourage creativity, resource allocation and cross-functional cooperation are the ones that facilitate product and service differentiation, which leads to competitiveness (Florek-Paszkowska*et al*., 2021). Similarly, leaders who effectively negotiated ambiguity help them to respond strategically to market changes promptly, which is converted into actual competitive advantages. Conversely, Inspirational, Adaptation and Visionary roles did not have a direct impact on competitive advantage. This implies that although these functions are essential in organizational culture and long-term orientation, they can only have a significant effect when directed through enhanced innovation capacity as opposed to its direct influence on competitive performance.

5.4 Mediating role of innovation capabilities

The strong and significant mediation effects confirm that innovation capabilities serve as the central pathway through which digital leadership translates into competitive advantage. All dimensions of leadership that have a direct impact have a very strong impact on competitiveness in case innovation capabilities are considered a mediator (Bresciani *et al*., 2021). This highlights the fact that digital leadership is not enough to achieve competitive advantage, organizations need to establish processes, structures and cultures that transform leadership implications into innovative practices. Innovation capabilities consequently serve as the transformational forces, increasing the impact of leadership and allowing firms to create value, providing a differentiation offering as well as react to technological change in a more efficient way.

5.5 Contribution to theoretical frameworks (RBV and dynamic capabilities)

These findings can be added to the Resource-Based View (RBV) as it is proved that digital leadership is an intangible strategic resource, which can be differentiated and

generates values. At the same time, the resultant findings may be used to support the perspective of Dynamic Capabilities as the capability to trace innovation capabilities as an upper-order capability that allows firms to repackage resources in a dynamic changing environment. Taken collectively, the evidence illustrates that the directional force is leadership behaviors and the adaptive capacity is innovation capabilities needed to be competitive.

5.6 Comparison with prior empirical studies

The results of this study are in line with an impressive number of empirical studies that have investigated the digital leadership-innovation capability-competitive performance intersection. The literature indicates that digital leadership is always important to facilitate innovation in an organization, particularly in markets that are dynamic and require a lot of technology. These current findings contribute to this academic agreement greatly by showing that the five dimensions of leadership Inspirational, Innovation, Uncertainty Management, Adaptation, and Visionary have a considerable impact on innovation abilities. This validates previous claims of multi-dimensional leadership behaviors which have a composite effect on the ability of an organization to generate, integrate and use new knowledge to produce value.

In line with Florek-Paszkowska *et al*. (2021), the findings confirm that visionary and adaptive leadership is among the most efficient antecedents of innovation capabilities. Past empirical research has shown that visionary leaders are bound to shape the formation of the digital strategies, characterize the long-term ambitions, and mobilize the organizational resources towards the technologically-oriented goals. Adaptive leaders on the other hand promote flexibility and responsiveness to turbulent environments. The existing findings support these insights as the Visionary Role is the one that has the largest influence on the innovativeness abilities. The visionary leaders do not only steer and provide clarity, but also help the employees to make sense of the changes that are happening in technology- an invaluable foundation of generation of coherent innovative practices. On the same note, the Adaptation Role is a powerful feature that can be employed to support the previous study which states that agile leadership encourages experimentation, continuous learning, and rapid technological adoption.

The research results on the Uncertainty Management Role also correlate with the available literature in which resilience and ambiguity-handling are also emphasized as the significant forces that contribute to the degree of innovation maturity. In unstable digital ecosystems that mitigate psychological barriers, encourage rational risk-taking, and create psychologically secure environments, leaders can help to the maximum in the innovation preparedness. It is demonstrated with the decisive role of uncertainty management in this study that leaders who have a high level of uncertainty management reaffirm the ability to innovate an organization to a high degree.

However, the results also show some subtle differences with regard to the Inspirational and Visionary roles in their direct correlation with competitive advantage. Although previous research has indicated a direct improvement in the performance with inspirational leadership due to the development of motivation and commitment, the current findings did not indicate a significant direct impact on competitive advantage. This implies that inspirational leadership might not produce competitive results in the context of ICT environment without an effective innovation mechanism. Their influence may be moderated by sector-specific aspects, including the complexity of technology, digital maturity, and organizational structure. These findings are linked to new claims, according to which in highly digitalized industries performance outputs are less contingent on motivational leadership practices and more based on innovation abilities and technological adherence.

Similarly, while the fact that the exchange of visionary leadership as a direct cause of competitive advantage has been extensively discussed in the older literature, the present study reveals that the role of the latter is entirely mediated by the innovation capabilities. This is in contrast to those studies where vision is regarded as an independent strategic asset. Rather, the results indicate that a vision in the fast-changing digital environment should be operationalized by initiating innovative practices to be converted into quantifiable competitive benefits. Vision only will not provide competitive performance unless it has structured capability-building mechanisms, as a guide of direction.

In general, the validation of the Innovation Capabilities as the most potent predictor of competitive advantage in the study is compatible with the bulk of existing empirical studies that placed the focus on innovation as the key factor of digital

transformations. Leadership behaviors can impact firm performance via dynamic, technological, and absorptive capabilities as a channel. This view is supported by the strong direct effect that was noted in this study whereby it has shown that organizations that have mature innovation systems are more agile, responsive and strategically proactive. The whole and partial mediation effects through the dimensions of leadership also confirm that innovation capabilities represent the necessary process of connecting digital leadership to competitive advantage.

6 CONCLUSION

The study has investigated the connection between digital leadership, innovation capabilities, and competitive advantage and provided empirical and theoretical insights into the digital transformation and strategic management research. The results support the fact that digital leadership is a decisive variable that determines the outcome of innovations, which positively affect the possibility of an organization to maintain a competitive advantage in changing fast technological conditions. The multidimensional nature of effective digital leadership was observed as all five dimensions of digital leadership Inspirational, Innovation, Uncertainty Management, Adaptation, and Visionary are significantly enhanced to increase innovation capabilities. These included the Visionary, Uncertainty Management and Adaptation roles, wherein the former, along with the latter, were the most predictive of innovation capabilities. This implies that those leaders that are capable of defining a visionary strategic path, operate with uncertainty, and constantly adapt organizational functions are in a better position to promote innovation and organizational learning. These observations highlight the need to be capable, robust, and nimble when responding to technological devastation.

The direct impact of digital leadership on competitive advantage, however, had a more complex trend. The Innovation Role and Uncertainty Management Role were the only two roles that had significant direct impacts on competitive advantage, which suggests that actions by leaders that promote creativity, experimentation, and the ability to operate in stressful situations result in more immediate performance benefits. Contrary, inspirational, visionary, and adaptive behaviors are not directly related to competitiveness unless they are underpinned by highly developed innovation competencies. This brings

out the fact that leadership is not enough, competitive advantage is achieved when leadership is incorporated in organizational systems that foster ideal generation, knowledge diffusion, and capability building.

One of the main contributions of the research is that, innovation capabilities play a central role as a mediator, and as a strategic resource. The capabilities on innovation brought the greatest effect on competitive advantage and this has proven the fact that innovation capabilities are one of the core dynamic capabilities that facilitate the organization to feel the opportunities, reorganize the resources, and react to the changes in market demands. The mediating influences that are found on the leadership dimensions support the view that innovation capabilities are the main means by which digital leadership leads to competitive performance.

6.1 Theoretical and practical implications

The results of the study contribute to theoretical implications greatly to the relevance of the Resource-Based View (RBV) and Dynamic Capabilities Theory (DCT) in the situation of digital transformation. The findings indicate that digital leadership is a valuable, rare, inimitable, and non-substitutable, strategic, intangible asset that can also be considered in line with the argument of RBV that competitive advantage is based on unique internal assets. Similarly, the innovation capabilities are developed as dynamic capability and allow the organization to combine, restructuring and redeploying resources in reaction to the technological change to aid in the adaptability of DCT highlighted in its focus on long term competitiveness.

In practice, the research has a number of implications to be taken. The leadership development programs in organizations should be enhanced based on the five main dimensions of digital leadership that include the following, visioning, creativity, uncertainty management, adaptability, and inspiration. Such actions increase the innovative ability directly. Companies are also advised to develop the culture of experimentation, cross-functional teamwork, and data-informed decisions in order to transform leadership orientation into meaningful innovation delivery. In addition, investments in digital technologies, customer analytics, and external partnerships can assist the organizations to feel the new trends and react to them. Lastly, ongoing education

and digital upskilling of leaders is a necessary measure to keep up with the fast rate of technological changes and maintain a competitive edge.

6.2 Limitations

The research offers sound empirical data, and it is limited in a number of ways. The cross-sectional type limits the causal inference, and the use of self-reported data can present the bias associated with the responses. The sample, though sufficient in the sense of the context is context specific and this may restrict the generalizability of the sample to other industries or cultural environments. These limitations can be overcome in future longitudinal or cross-sectional studies.

6.3 Future research directions

The future research directions should be able to include the contextual moderators that will look into the improvement of the knowledge on when and how digital leadership can have the greatest impact. The intensity or even orientation of the leadership impacts on the innovation capacity and competitive advantage may be influenced by such variables as the digital organizational culture, technological turbulence, and organizational structure. The discussion of these moderators would aid in defining the conditions under which digital leadership practices are more efficient particularly in the settings that could be characterized as the ones that have rapid changes or lack resources. The cross-country comparative studies would also add to the literature by offering details on how the institutional structures, national culture and maturity of the industry affects the practices in leadership, as well as the results of innovation. The differences in the comprehension and application of digital transformation in various socio-economic and cultural contexts may be revealed with the assistance of such comparative studies.

The field methodology could use a desirable qualitative and mixed methods addition. Even though quantitative surveys may be employed to provide a generalizable insight, they may not be able to produce insights on finer details of leadership, emotional details, or situational details. It is possible that interviews or case studies or ethnography

studies uncover the motivation that digital leaders are actually driven by, their motivation techniques, how they overcome and how they incorporate innovation in their day-to-day routines.

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